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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/782,169	02/14/2001	Shoji Hara	010164	2107

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EXAMINER

TALBOT, BRIAN K

ART UNIT	PAPER NUMBER
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1762

DATE MAILED: 09/09/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/782,169

Applicant(s)

HARA ET AL.

Examiner

Brian K Talbot

Art Unit

1762

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 July 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13, 17 and 18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13, 17 and 18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☒ Other: *Declaration noted*.

Art Unit: 1762

1. The Request for reconsideration filed 7/11/03 has been considered and entered.

Claims 1-13 and 17-18 remain in the application.

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. The Declaration filed 7/11/03 has been noted and considered.

Claim Rejections - 35 USC § 103

4. Claims 1-13,17 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chen et al. (5,156,710) or Shiotani et al. (5,741,598) in combination with Ameen et al. (5,681,443).

Chen et al. (5,156,710) or Shiotani et al. (5,741,598) or JP 62-60640 teach applying a metal layer to a polyimide layer and heating to form a conductor layer atop the polyimide layer. The polyimide layer is formed by imidizing a polyamic acid. The metal layer can be applied by a variety of ways but laminating a metal foil is most preferred. Shiotani et al. (5,741,598) further teaches that it is conventional in the art to form the metal layer atop the polyimide film by plating (col. 1, lines 27-30)

Chen et al. (5,156,710) or Shiotani et al. (5,741,598) fail to teach a dry plating method and subsequent wet plating method to build up the conductor.

Art Unit: 1762

Ameen et al. (5,681,443) teaches forming printed circuits whereby a metal flash layer is applied to a polymer substrate by vapor deposition or sputtering and subsequently a metal layer is applied to the flash metal by electrodeposition.

Therefore, it would have been obvious for one skilled in the art at the time the invention was made to have modified Chen et al. (5,156,710) or Shiotani et al. (5,741,598) process by forming the conductor layer as evidenced by Ameen et al. (5,681,443) with the expectation of achieving similar results.

Claim Rejections - 35 USC § 102

5. Claims 1-11,13,17 and 18 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by JP 62-60640.

JP 62-60640 teaches sputtering or vapor depositing a metal atop a thermoplastic polyimide sheet and heating to form the laminated film. The metal can be copper.

Claim Rejections - 35 USC § 103

Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over JP 62-60640 in combination with Ameen et al. (5,681,443).

JP 62-60640 fails to teach wet coating a metal atop the dry coated metal.

Ameen et al. (5,681,443) teaches forming printed circuits whereby a metal flash layer is applied to a polymer substrate by vapor deposition or sputtering and subsequently a metal layer is applied to the flash metal by electrodeposition.

Art Unit: 1762

Therefore it would have been within the skill of one practicing in the art to have modified JP 62-60640 by forming a second metal coating by wet plating as evidenced by Ameen et al. (5,681,443) with the expectation of achieving success, i.e. a thicker coating.

Response to Arguments

6. Applicant's arguments filed 7/11/03 have been fully considered but they are not persuasive.

Applicant argued that the prior art (Ameen) does not teach a thermoplastic polyimide as KAPTON is not disclosed as thermoplastic.

The Examiner agrees in part. The reference is relied upon for the teaching of applying a metal flash layer atop a polymer layer and not applied for the specific polymer layer as argued. This limitation is provided by the primary references.

With respect to the Declaration, the comparative examples with respect to Ameen are documented, however, the rejection is based upon a combination rejection and therefore the Declaration is not convincing to overcome the rejection.

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the

Art Unit: 1762

shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian K Talbot whose telephone number is (703) 305-3775. The examiner can normally be reached on Tuesday-Friday 6AM-4PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shrive P Beck can be reached on (703) 308-2333. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-6078 for regular communications and (703) 872-9765 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3775.



Brian K Talbot
Primary Examiner
Art Unit 1762

BKT
September 8, 2003